

SMART Transmitter Power Supply KFD2-STV4-Ex2-1

- 2-channel isolated barrier
- 24 V DC supply (Power Rail)
- Input 2-wire SMART transmitters
- Output 0/1 V ... 5 V
- Terminals with test points
- Up to SIL 2 acc. to IEC/EN 61508



Function

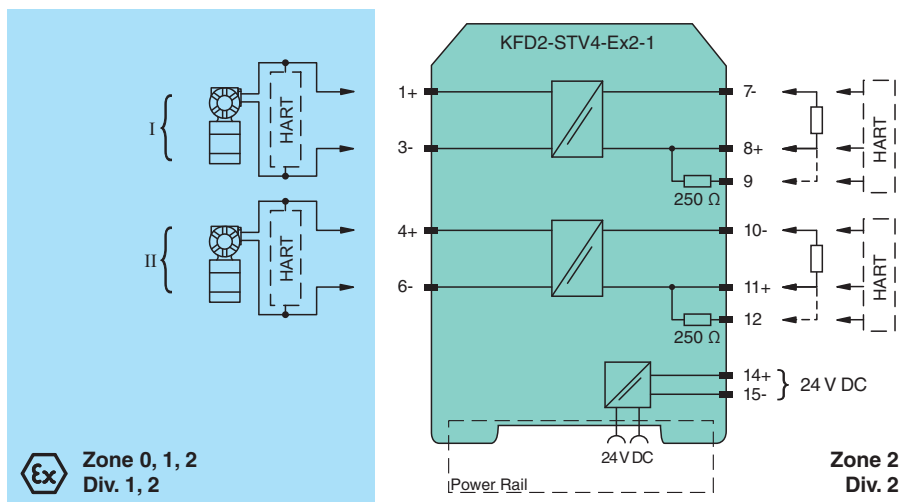
This isolated barrier is used for intrinsic safety applications. The device supplies 2-wire SMART transmitters in a hazardous area. It transfers the analog input signal to the safe area as an isolated voltage value. Digital signals may be superimposed on the input signal in the hazardous or safe area and are transferred bi-directionally. If the HART communication resistance in the loop is too low, the internal resistance of 250 Ω between terminals 8, 9 and 11, 12 can be used. Test sockets for the connection of HART communicators are integrated into the terminals of the device.

Application

The device supports the following SMART protocols:

- HART
- BRAIN
- Foxboro

Connection



Technical Data

General specifications	
Signal type	Analog input
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 2
Supply	

Technical Data

Connection		Power Rail or terminals 14+, 15-
Rated voltage	U_r	20 ... 35 V DC
Ripple		within the supply tolerance
Power dissipation		1.8 W
Power consumption		max. 2.7 W
Input		
Connection side		field side
Connection		terminals 1+, 3-; 4+, 6-
Input signal		0/4 ... 20 mA
Available voltage		≥ 16 V at 20 mA, terminals 1+, 3
Output		
Connection side		control side
Connection		terminals 7-, 8+; 10-, 11+
Load		output resistance: 250 Ω
Output signal		0/1 ... 5 V
Ripple		max. 12.5 mV
Transfer characteristics		
Deviation		at 20 °C (68 °F), 0/1 ... 5 V ≤ 5 mV incl. calibration, linearity, hysteresis, loads and fluctuations of supply voltage
Influence of ambient temperature		≤ 20 ppm/K
Frequency range		field side into the control side: bandwidth with 0.5 V _{pp} signal 0 ... 7.5 kHz (-3 dB) control side into the field side: bandwidth with 0.5 V _{pp} signal 0.3 ... 7.5 kHz (-3 dB)
Rise time		20 μ s
Settling time		200 μ s
De-energized delay		20 μ s
Galvanic isolation		
Output/power supply		functional insulation, rated insulation voltage 50 V AC
Output/Output		functional insulation, rated insulation voltage 50 V AC
Indicators/settings		
Display elements		LED
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Electromagnetic compatibility		NE 21:2011
Degree of protection		IEC 60529:2001
Protection against electrical shock		UL 61010-1:2012
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 150 g
Dimensions		20 x 124 x 115 mm (0.8 x 4.9 x 4.5 inch) (W x H x D) , housing type B2
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
EU-type examination certificate		BAS 99 ATEX 7025 X
Marking		Ⓔ II (1)G [Ex ia Ga] IIC , Ⓔ II (1)D [Ex ia Da] IIIC , Ⓔ I (M1) [Ex ia Ma] I
Input		[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
Voltage	U_o	25.2 V
Current	I_o	93 mA
Power	P_o	0.586 W
Supply		

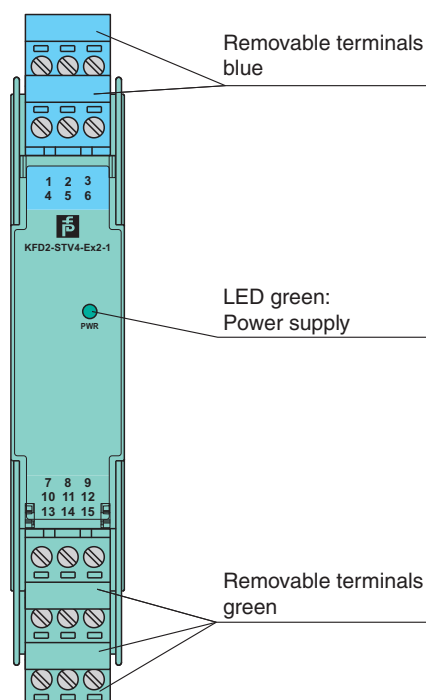
Release date: 2023-06-05 Date of issue: 2023-06-05 Filename: 283726_eng.pdf

Technical Data




Maximum safe voltage	U _m	250 V (Attention! The rated voltage can be lower.)
Certificate		TÜV 99 ATEX 1499 X
Marking		Ⓔ II 3G Ex nA II T4
Galvanic isolation		
Input/Output		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Input/power supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020 , EN 60079-11:2012 , EN 60079-15:2010
International approvals		
UL approval		E106378
Control drawing		116-0428 (cULus)
IECEX approval		
IECEX certificate		IECEX BAS 04.0015X IECEX CML 15.0055X
IECEX marking		[Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I Ex nA IIC T4 Gc
General information		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .

Assembly




Front view







Matching System Components

	KFD2-EB2	Power Feed Module
	UPR-03	Universal Power Rail with end caps and cover, 3 conductors, length: 2 m
	UPR-03-M	Universal Power Rail with end caps and cover, 3 conductors, length: 1,6 m

Matching System Components

	UPR-03-S	Universal Power Rail with end caps and cover, 3 conductors, length: 0.8 m
	K-DUCT-BU	Profile rail, wiring comb field side, blue
	K-DUCT-BU-UPR-03	Profile rail with UPR-03- * insert, 3 conductors, wiring comb field side, blue

Accessories

	KF-STP-5BU	Terminal block for KF modules, 3-pin screw terminal, with test sockets, blue
	KF-STP-5GN	Terminal block for KF modules, 3-pin screw terminal, with test sockets, green
	KF-ST-5GN	Terminal block for KF modules, 3-pin screw terminal, green
	KF-CP	Red coding pins, packaging unit: 20 x 6